Architectural Thesis

Designs

Texts

B. S.
1904

A PHYSICAL LABORATORY

FOR THE UNIVERSITY OF ILLINOIS

BY

JOHN TERRELL VAWTER, JR.

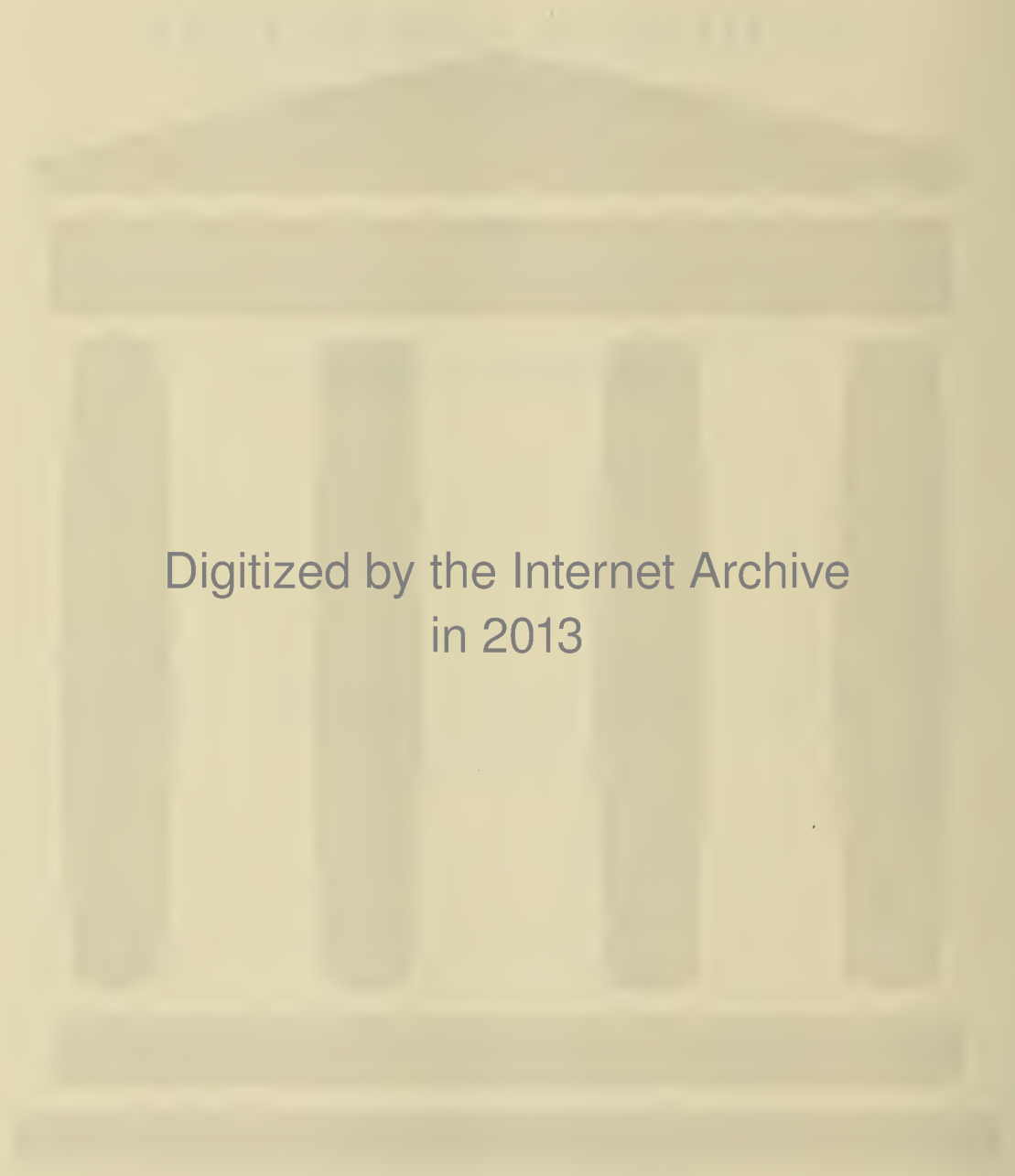
THESIS FOR THE DEGREE OF BACHELOR OF SCIENCE

IN ARCHITECTURE

COLLEGE OF ENGINEERING

UNIVERSITY OF ILLINOIS

PRESENTED JUNE 1904



UNIVERSITY OF ILLINOIS

May 27, 1904 190

THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

JOHN TERRELL VAWTER, Jr.

ENTITLED A PHYSICAL LABORATORY FOR THE UNIVERSITY OF ILLINOIS

IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE DEGREE

OF Bachelor of Science in Architecture.

N. Clifford Ricker.

HEAD OF DEPARTMENT OF Architecture

1904
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It is difficult to bound the provinces of the Architect and the professor in charge in the design of a physical laboratory. The conditions to be fulfilled in the design of laboratories vary without limit anda study of some of the laboratories in the"Science" magazine would lead one to believe that too often convenient details, pet schemes, hobbies, and cherrished little inventions are magnified beyond their proper proportions, usually to the detriment of the general scheme.

In this problem it is noticeable that no restrictions are placed upon steel construction or upon the construction of the foundations or basement walls, in which case the piers would be placed in pits.

The conditions as suggested by Professor Carmen are as follows:-

I. The Building shall be as nearly fire proof as possible.

II Shafts and conduits for carrying pipes and wires for experimental purposes must be provided.

III Ventilation must be well provided for throughout the building, and particularly in photometry, photographies and battery rooms, or any other rooms where windows are not admissible and gasses are liable to be generated.

IV The lot to be assumed is the one immediately east of the Engineering Building; roughly 200 ft. square.

V The building should be well lighted, cheerful and convenient, and should provide,-

1. A large Lecture Room to seat between 400 and 500 students, arranged in the most compact manner possible, with easy communication with the outside and convenient to apparatus room.

2. A large Elementary Laboratory same size(62 x 68ft) and similarly

arranged as one now used in Engineering Building but with more wall space.

3. Two Recitation Rooms to accomodate 40 students each.

4. Ten Pier Rooms similar to present ones in Engineering Building (22 x 27 ft.)

5. A Constant Temperature Room.

6. A Workshop, with North light.

7. Apparatus Room near Laboratory, twice the size of present ones.

8. Apparatus and Preparation Room near laboratory, larger than present ones. which are 16 x 27 ft. 15 x 16 ft & 18 x 20.

9. A Supervision Room and Office in connection with large laboratory.

10. One General Office in connection with which is the Office for the Head of the Department, to be centrally located.

11. Two Offices convenient to the pier rooms. All offices to be small as compaired with present ones in Engineering Building.

12. Library and Seminary Room for 25 or 30 students.

13. Cloak Rooms in connection with laboratory.

14. Two or Three Photometry Rooms.

15. One or two Photographic Dark Rooms.

As an after consideration it was suggested to provide.-

1. A large Recitation Room close to the apparatus room to be used as alecture room for small classes.

2. A Battery Room.

3. A Sound Room.

4. One or two small private laboratories where special apparatus might be set up.

5. A hood in at least one room for chemical experiments.

In the lecture room it was required to give considerable rise to the seating, at the same time to make the entrance and exit on the ground floor, without stairways.

The floor area required and the relative sizes of rooms was carefully calculated from the above suggestions and also from a study of the plans of the laboratories of Case, Cornell, Harvard, Johns Hopkins, Kansas and Nebraska, found in the "Science" magazine.

In strict accordance with the conditions of the problem, nearly two thirds of the floor area required was to be on the first floor.

The difficulty of the problem was to keep a well lighted building of the required ground floor area within the limits of the lot asigned. As to the solution of the problem, it is hoped that the plans and section are self explanitory.

It may be said, that while not indicated upon the drawings, the first three of the general conditions were carefully considered and are quite possible of fulfillment in the design.

The apparatus room is arranged with two tiers of cases; the upper being accesable from a gallery. The shop is also provided with a gallery for storage, lighted by a sky-light. Ample storage is also provided under the lecture room. The windows at the back of the general laboratory are about 7 feet above the floor giving ample wall space beneath them.

The exterior of the building has been studied for simplicity of design and the rendering of the problem for a personfication of restraint.